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Spin wave excitations in single crystalline $U_3Pd_{20}Si_6$

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Inelastic neutron scattering were performed on single crystalline $U_3Pd_{20}Si_6$ to investigate the nature of the 5f electrons of uranium compounds. Antiferromagnetic spin wave excitations due to the uranium 5f electrons at the 8c site were observed below the Néel temperature T_N = 19 K, exhibiting the localized nature of the 5f electrons. Its line width was found to show the energy resolution limited behaviour except for the the zone center. The anomolous line width around the zone center will be discussed in connection with the magnetic ordering at the 4a site below T = 2 K.

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